HEATHKIT® MANUAL

HEATH COMPANY • BENTON HARBOR, MICHIGAN

HEATH COMPANY PHONE DIRECTORY

The following telephone numbers are direct lines to the departments listed:

Kit orders and delivery information	(616) 982-3411
Credit	(616) 982-3561
Replacement Parts	(616) 982-3571

Technical Assistance Phone Numbers
8:00 A.M. to 4:30 P.M., EST, Weekdays Only

Audio,	(616) 982-3310
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YOUR HEATHKIT 90-DAY LIMITED WARRANTY

Consumer Protection Plan for Heathkit Consumer Products

Welcome to the Heath family. We believe you will enjoy assembling your kit and will be pleased with its performance. Please read this Consumer Protection Plan carefully. It is a "LIMITED WARRANTY" as defined in the U.S. Consumer Product Warranty and Federal Trade Commission Improvement Act. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Heath's Responsibility

PARTS — Replacements for factory defective parts will be supplied free for 90 days from date of purchase. Replacement parts are warranted for the remaining portion of the original warranty period. You can obtain warranty parts direct from Heath Company by writing or telephoning us at (616) 982-3571. And we will pay shipping charges to get those parts to you . . . anywhere in the world.

SERVICE LABOR — For a period of 90 days from the date of purchase, any malfunction caused by defective parts or error in design will be corrected at no charge to you. You must deliver the unit at your expense to the Heath factory, any Heath/Zenith Computers and Electronics center (units of Veritechnology Electronics Corporation), or any of our authorized overseas distributors.

TECHNICAL CONSULTATION — You will receive free consultation on any problem you might encounter in the assembly or use of your Heathkit product. Just drop us a line or give us a call. Sorry, we cannot accept collect calls.

NOT COVERED — The correction of assembly errors, adjustments, calibration, and damage due to misuse, abuse, or negligence are not covered by the warranty. Use of corrosive solder and/or the unauthorized modification of the product or of any furnished component will void this warranty in its entirety. This warranty does not include reimbursement for inconvenience, loss of use, customer assembly, set-up time, or unauthorized service.

This warranty covers only Heath products and is not extended to other equipment or components that a customer uses in conjunction with our products.

SUCH REPAIR AND REPLACMENT SHALL BE THE SOLE REMEDY OF THE CUSTOMER AND THERE SHALL BE NO LIABILITY ON THE PART OF HEATH FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO ANY LOSS OF BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Owner's Responsibility

EFFECTIVE WARRANTY DATE — Warranty begins on the date of first consumer purchase. You must supply a copy of your proof of purchase when you request warranty service or parts.

ASSEMBLY — Before seeking warranty service, you should complete the assembly by carefully following the manual instructions. Heathkit service agencies cannot complete assembly and adjustments that are customer's responsibility.

ACCESSORY EQUIPMENT — Performance malfunctions involving other non-Heath accessory equipment, (antennas, audio components, computer peripherals and software, etc.) are not covered by this warranty and are the owner's responsibility.

SHIPPING UNITS — Follow the packing instructions published in the assembly manuals. Damage due to inadequate packing cannot be repaired under warranty.

If you are not satisfied with our service (warranty or otherwise) or our products, write directly to our Director of Customer Service, Heath Company, Benton Harbor MI 49022. He will make certain your problems receive immediate, personal attention.

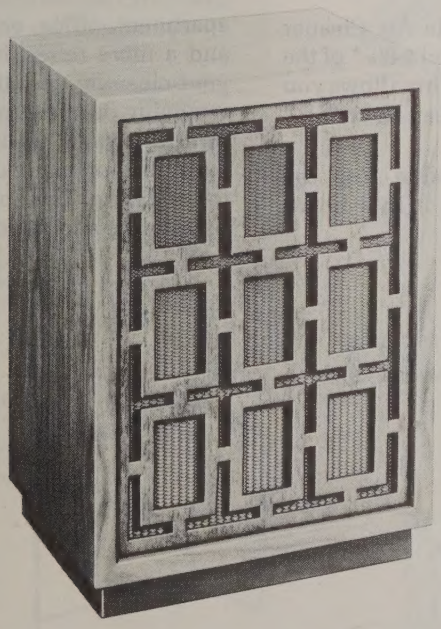
Heathkit® Manual

for the

CONSOLE AIR CLEANER

Model GD-1297

595-2458-05



HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022

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INTRODUCTION

The Heathkit Model GD-1297 Console Air Cleaner removes 99% * of all airborne pollen and 94% * of the airborne particles passing through it. This allows you to enjoy a "refreshing experience in clean air living."

This Air Cleaner is completely portable. You can economically and effectively operate it in a home, apartment, office, or laboratory to provide clean air and a more refreshing atmosphere. It also reduces your cleaning, painting, and redecorating chores by removing the airborne pollution that stains and soils furniture, rugs, walls, and drapes. All of the wires have push-on connectors, which eliminates the need for soldering. The Console Air Cleaner is both a good investment and handsome addition to your decor.

*National Bureau of Standards Dust Spot Method and American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 52-68.

UNPACKING AND ASSEMBLY INSTRUCTIONS

Your Console Air Cleaner is shipped in two separate cartons. The smaller carton contains the electronics, while the larger one contains the cabinet and the cell assembly.

Use the following procedure to unpack the cabinet and cell assembly:

( ) Carefully remove the cabinet from the shipping carton. Then remove the plastic bag from the cabinet.

( ) Set the cabinet right-side-up on your work surface. Then remove the tape that holds the back panel on the cabinet and set the back panel aside.

( ) Use the following procedure to remove the cell assembly:

1. Refer to Figure A and remove the cardboard spacers from around the cell assembly.

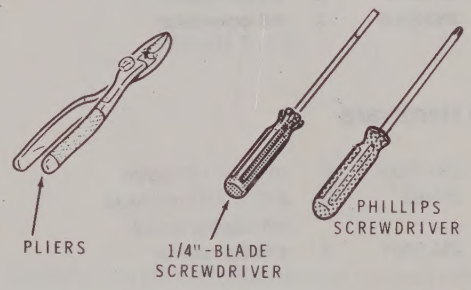
2. Refer again to Figure A and tilt the top of the cell assembly toward the rear of the cabinet. Then remove the cell assembly from the cabinet.

3. Refer to Figure B and slide the charcoal filter (packed in a plastic bag) out of the assembly. Then remove the plastic bag from the filter and return the filter to the cell assembly.

NOTE: You can also remove the prefilter from the cell assembly in the same way as the charcoal filter. If you remove this filter, do not disturb the fine wires inside the cell assembly.

TOOLS

You will need these tools to assemble your kit.



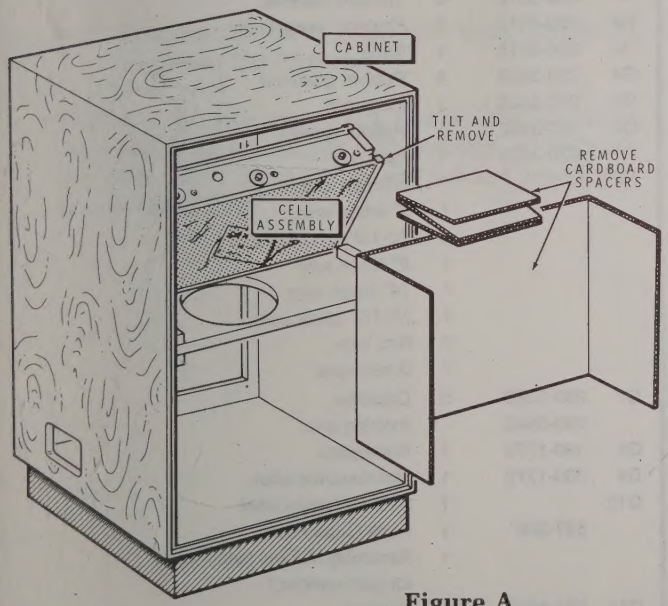


Figure A

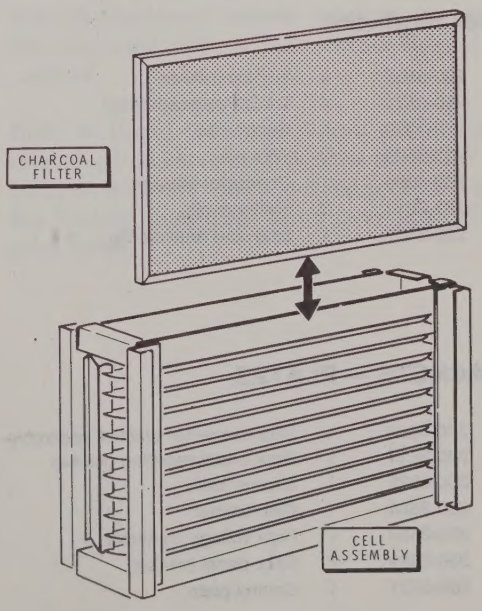


Figure B

PARTS LIST

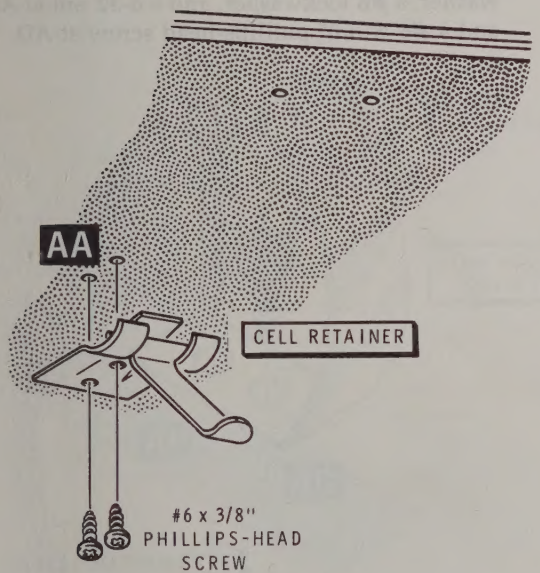
Check each part against the following list. The key numbers correspond to the numbers on the "Parts Pictorial" (Illustration Booklet, Pages 1 and 2). Parts may vary slightly from the illustrations; only the hardware is shown actual size.

To order a replacement part, always include the Part Number. Use the Parts Order Form furnished with this kit. If a Parts Order Form is not available, refer to "Replacement Parts" inside the rear cover of this Manual. For prices, refer to the separate "Heath Parts Price List."

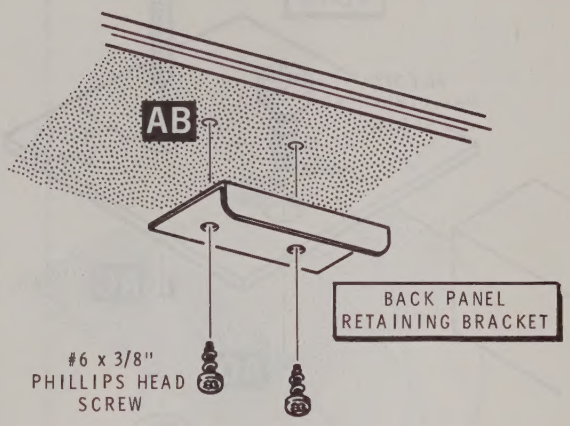
KEY No.	HEATH Part No.	QTY.	DESCRIPTION
HARDWARE			
#6 Hardware			
A1	230-3528	18	#6 × 3/8" phillips-head screw (2 extra)
A2	230-3505	2	6-32 × 1" screw
A3	230-3506	4	6-32 nut
A4	230-3507	2	#6 flat washer
A5	230-3508	2	#6 lockwasher
#10 Hardware			
B1	230-3503	4	10-32 × 1/2" screw
B2	250-83	16	#10 × 1/2" hex-head self-tapping screw
B3	230-3501	4	#10 flat washer
Other Hardware			
C1	250-3502	4	1/4" flat washer
C2	230-3511	4	1/4-20 lockwasher-nut
C3	230-3539	1	Control nut
C4	230-3520	2	Wire nut
C5	230-3504	1	Connector adapter
C6	230-3514	3	Fastener clip
C7	230-3517	1	Line cord retainer clip
BRACKETS — PLATES			
D1	230-3509	1	Line connector bracket assembly
D2	230-3518	1	Back panel retaining bracket
D3	230-3522	1	Ground plate
D4	230-3524	1	Cell retainer
D5	230-3526	1	High voltage contactor
D6	230-3529	2	Back panel bracket
D7	230-3531	1	Control plate

KEY No.	HEATH Part No.	QTY.	DESCRIPTION
ELECTRONIC COMPONENTS			
E1	230-3510	1	Pilot lamp
E2	230-3530	1	Speed switch
E3	230-3534	1	Power supply assembly
E4	230-3536	1	Blower motor
CELL ASSEMBLY			
F1	230-3535	1	Cell assembly
F2	230-3519	1	Prefilter
F3	230-3527	1	Charcoal filter. **NOTE: When you order a replacement filter, use model number GDA-1297-2.**
MISCELLANEOUS			
G1	230-3513	3	1/4-turn fastener
G2	230-3515	3	Fastener receptacle
G3	230-3516	1	Knob
G4	230-3523	4	Rubber grommet
G5	230-3525	1	Line cord
G6	230-3532	1	Rubber gasket
	230-3533	1	Wire set consisting of:
		1	*5" white wire*
		1	*10-1/2" white wire*
		1	*9" black wire*
		1	*14" black wire*
		1	*16-1/2" black wire*
		1	*Red wire*
		1	*Green wire*
G7	230-3538	3	Cable tie
	230-3542		Ionizing wire
G8	390-1773	1	Nameplate
G9	390-1772	1	Maintenance label
G10		1	Blue and white label
	597-260	1	Parts Order Form
		1	Assembly Manual (see Page 1 for part number.)
G11	230-3537	1	Cabinet
G12	266-1086	4	Caster

STEP-BY-STEP ASSEMBLY



Detail 1-1A



Detail 1-1B

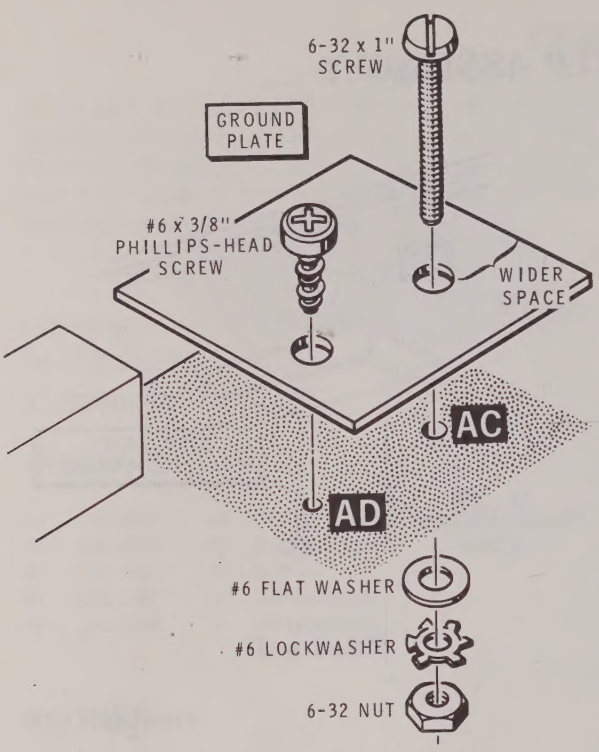
Refer to Pictorial 1-1 (Illustration Booklet, Page 3) for the following steps.

( ) Position the cabinet on your work surface as shown in the Pictorial.

NOTE: In the following steps, you will be mounting parts inside the top section of the cabinet. Always use the pilot holes provided in the cabinet when you mount these parts.

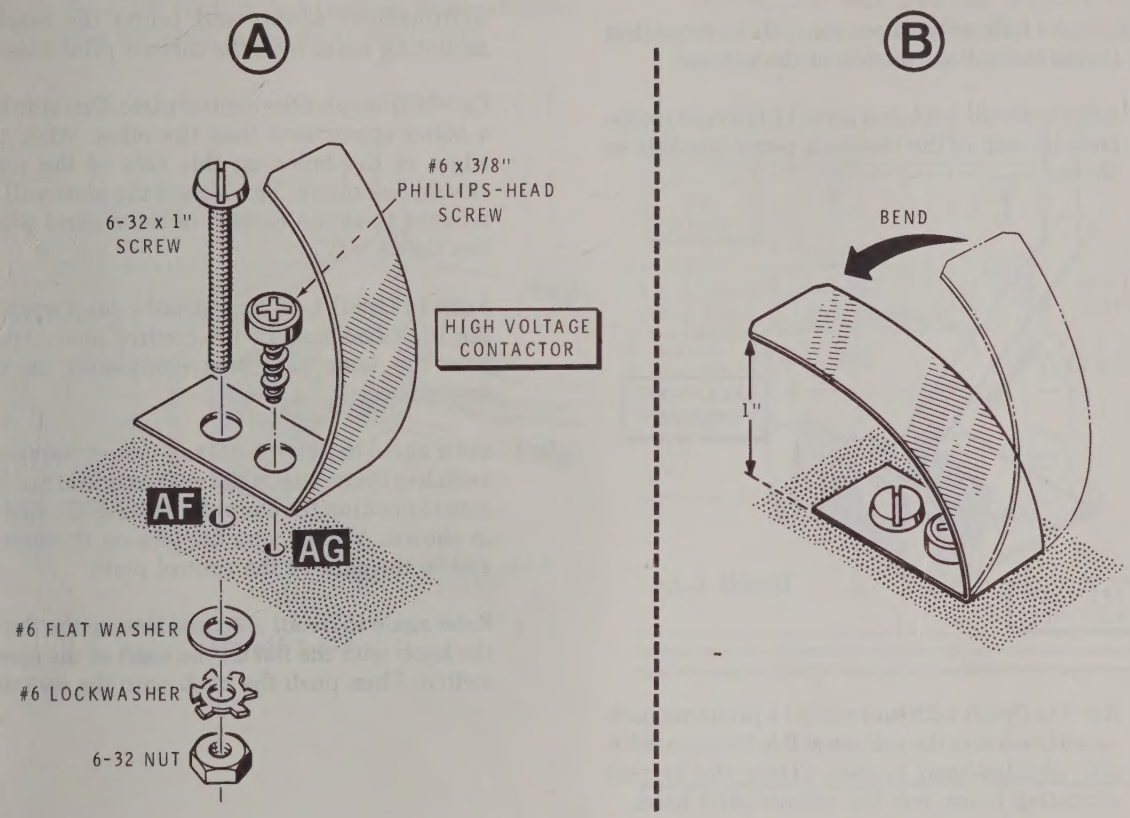
( ) Refer to Detail 1-1A and mount the cell retainer to the top of the cabinet at AA. Use two #6 × 3/8″ phillips-head screws. Be sure you mount the indicated side of the retainer toward the cabinet.

( ) Refer to Detail 1-1B and mount a back panel retaining bracket to the top of the cabinet at AB. Use two #6 × 3/8″ phillips-head screws. Center the bracket mounting holes over the cabinet pilot holes.



Detail 1-1C

( ) Refer to Detail 1-1C and mount a ground plate to the cabinet as shown. Note that one of the mounting holes is further away from the edge of the plate. Use a 6-32 × 1″ screw, a #6 flat washer, a #6 lockwasher, and a 6-32 nut at AC and a #6 × 3/8″ phillips-head screw at AD.



Detail 1-1D

( ) **Refer to Detail 1-1D and mount a high voltage contactor to the cabinet as shown. Use a 6-32 × 1″ screw, #6 flat washer, #6 lockwasher, and 6-32 nut at AF and a #6 × 3/8″ phillips-head screw at AG.**

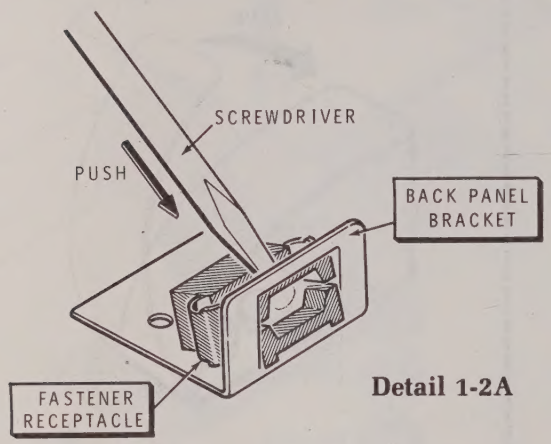
NOTE: When you perform the next step, be careful not to overbend the contactor or it may break.

( ) Bend the free end of the high voltage contactor down toward the cabinet. The end of the contactor should be about 1″ away from the cabinet when you have it properly formed.

Refer to Pictorial 1-2 (Illustration Booklet, Page 3) for the following steps.

NOTE: In the following steps, you will be mounting parts inside the bottom section of the cabinet.

( ) Refer to Detail 1-2A and install a fastener receptacle in each of the two back panel brackets as shown.



Detail 1-2A

( ) Refer to Detail 1-2B and mount a prepared back panel bracket to the cabinet at BA. Use two #6 × 3/8" phillips-head screws. Center the bracket mounting holes over the cabinet pilot holes.

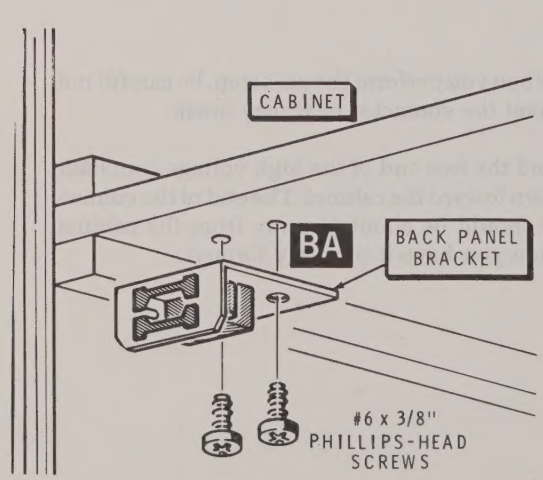
( ) Similarly, mount a prepared back panel bracket to the cabinet at BB. Use two #6 × 3/8" phillips-head screws and center the bracket mounting holes over the cabinet pilot holes.

( ) Carefully inspect the control plate. One side has a better appearance than the other. Also, the edges of the holes on this side of the plate should be smooth. This side of the plate will be referred to as the outside of the control plate. See Detail 1-2C.

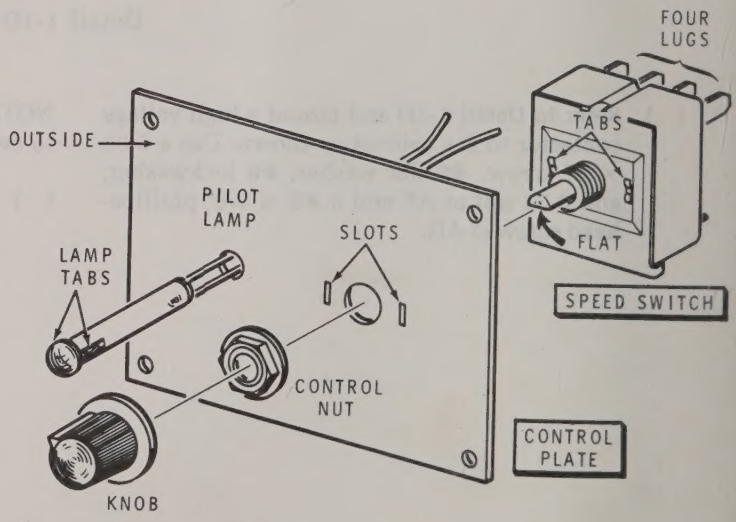
( ) Refer to Detail 1-2C and install a pilot lamp in the indicated hole of the control plate. Make sure the lamp tabs seat completely in the mounting hole.

( ) Refer again to Detail 1-2C and mount the speed switch to the control plate with a control nut. Be sure to position the control plate and the switch as shown. Also be sure the tabs on the switch seat in the slots in the control plate.

( ) Refer again to Detail 1-2C and line up the flat in the knob with the flat on the shaft of the speed switch. Then push the knob onto the switch.

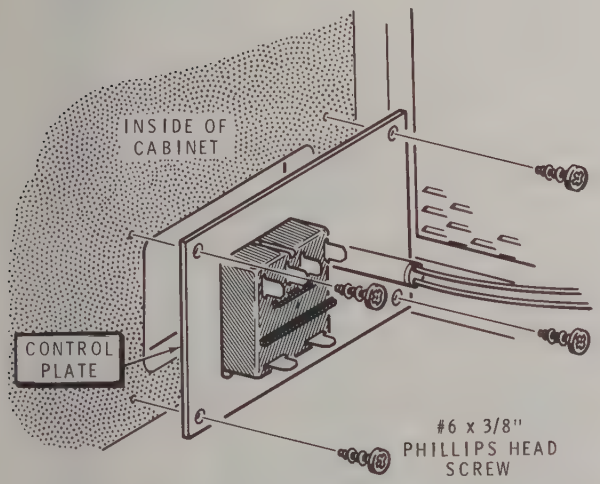


Detail 1-2B



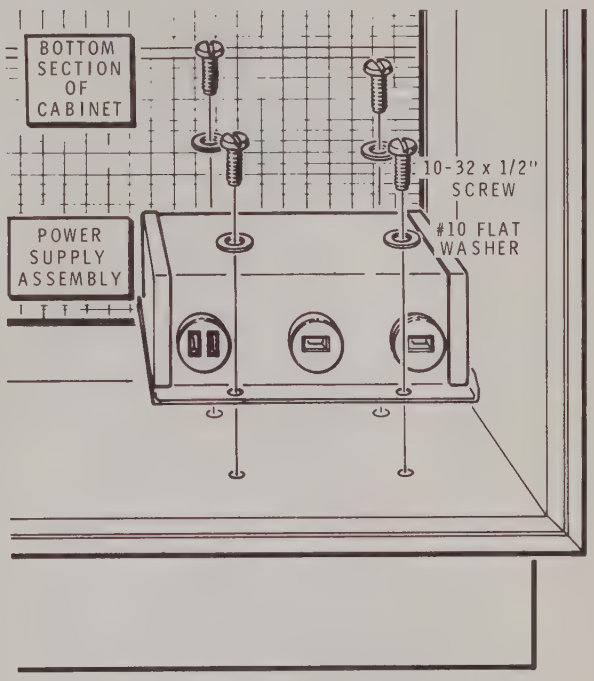
Detail 1-2C

( ) Refer to Detail 1-2D and mount the control plate onto the inside of the cabinet as shown. Use four #6 × 3/8″ phillips-head screws. Be sure to position the plate as shown in the Detail.

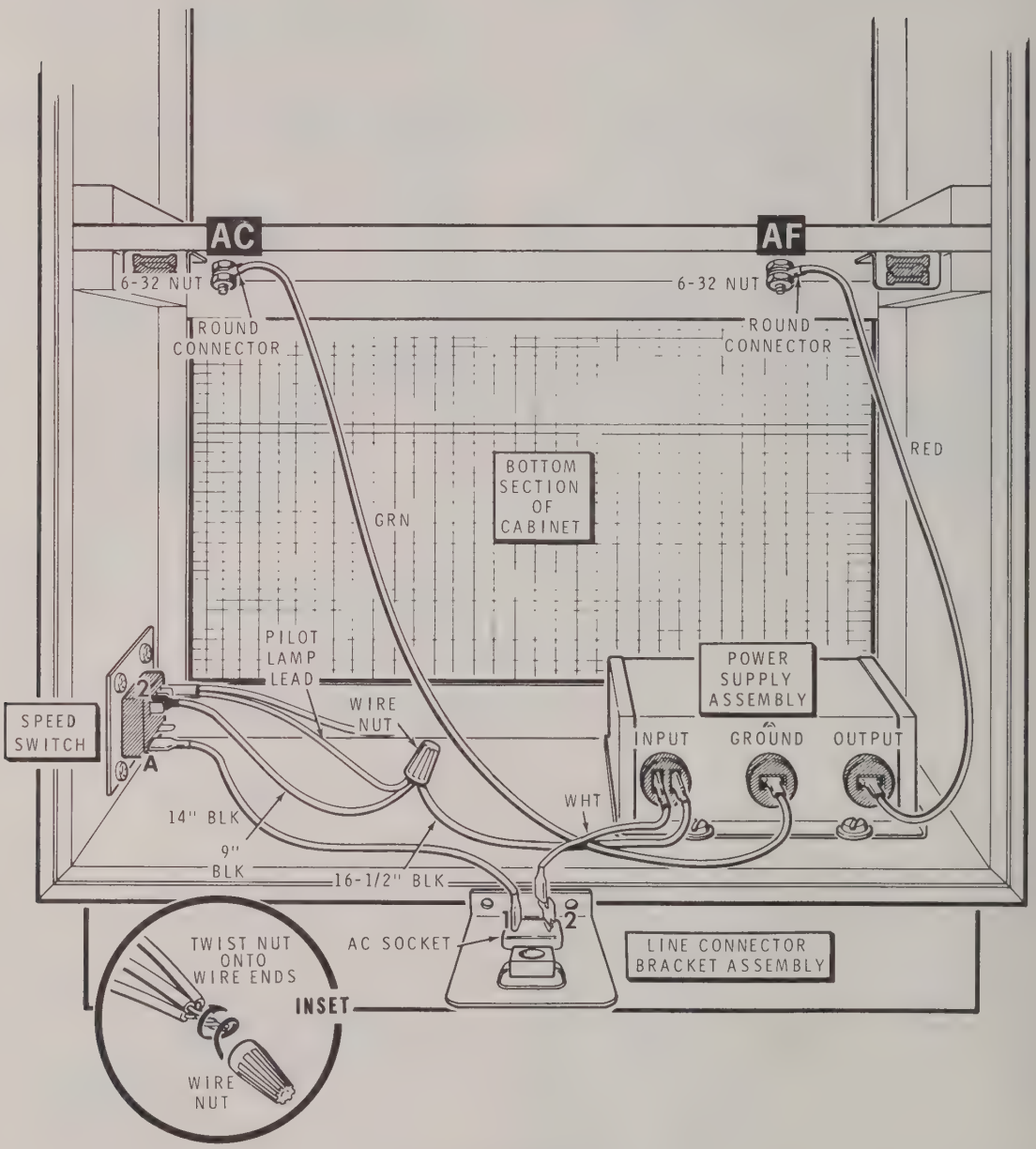


Detail 1-2D

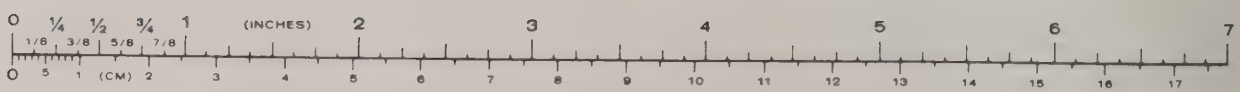
( ) Refer to Detail 1-2E and mount the power supply assembly to the bottom of the cabinet as shown. Use four #10 flat washers and four 10-32 × 1/2″ screws. Be sure to position the power supply as shown in the Detail.



Detail 1-2E



PICTORIAL 1-3



Refer to Pictorial 1-3 for the following steps.

( ) Mount the round connector on the end of the green wire onto the screw at AC. Use a 6-32 nut. Position the connector as shown in the Pictorial before you tighten the nut.

( ) Push the connector on the free end of the green wire onto the power supply GROUND tab.

( ) Mount the round connector on the end of the red wire onto the screw at AF. Use a 6-32 nut. Position the connector as shown in the Pictorial before you tighten the nut.

( ) Route the red wire as shown and push the connector on the free end of the red wire onto the power supply (+) OUTPUT tab.

( ) Locate the 9″ black wire and the 16-1/2″ black wire.

( ) Refer to the inset drawing on the Pictorial and twist together the bared ends of the 9″ black wire, the 16-1/2″ black wire, and either pilot lamp lead. Then turn a wire nut onto the end of this wire connection.

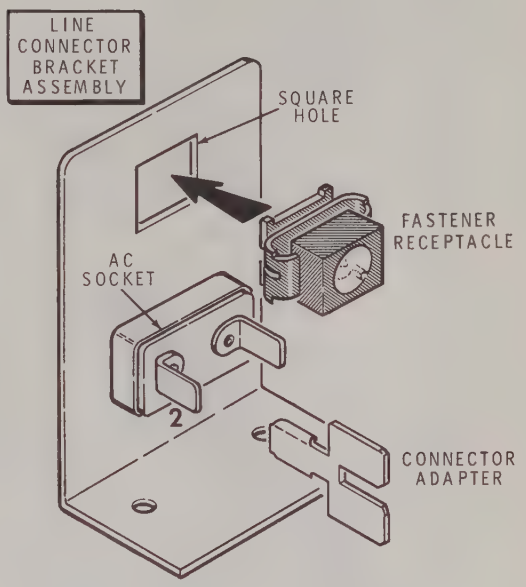
( ) Push the connector on the free end of the 9″ black wire onto speed switch lug 2.

( ) Push the connector on the free end of the 16-1/2″ black wire onto either power supply INPUT tab.

( ) Refer to Detail 1-3A and prepare the line connector bracket assembly as follows:

1. Push a fastener receptacle into the square hole in the bracket as shown.

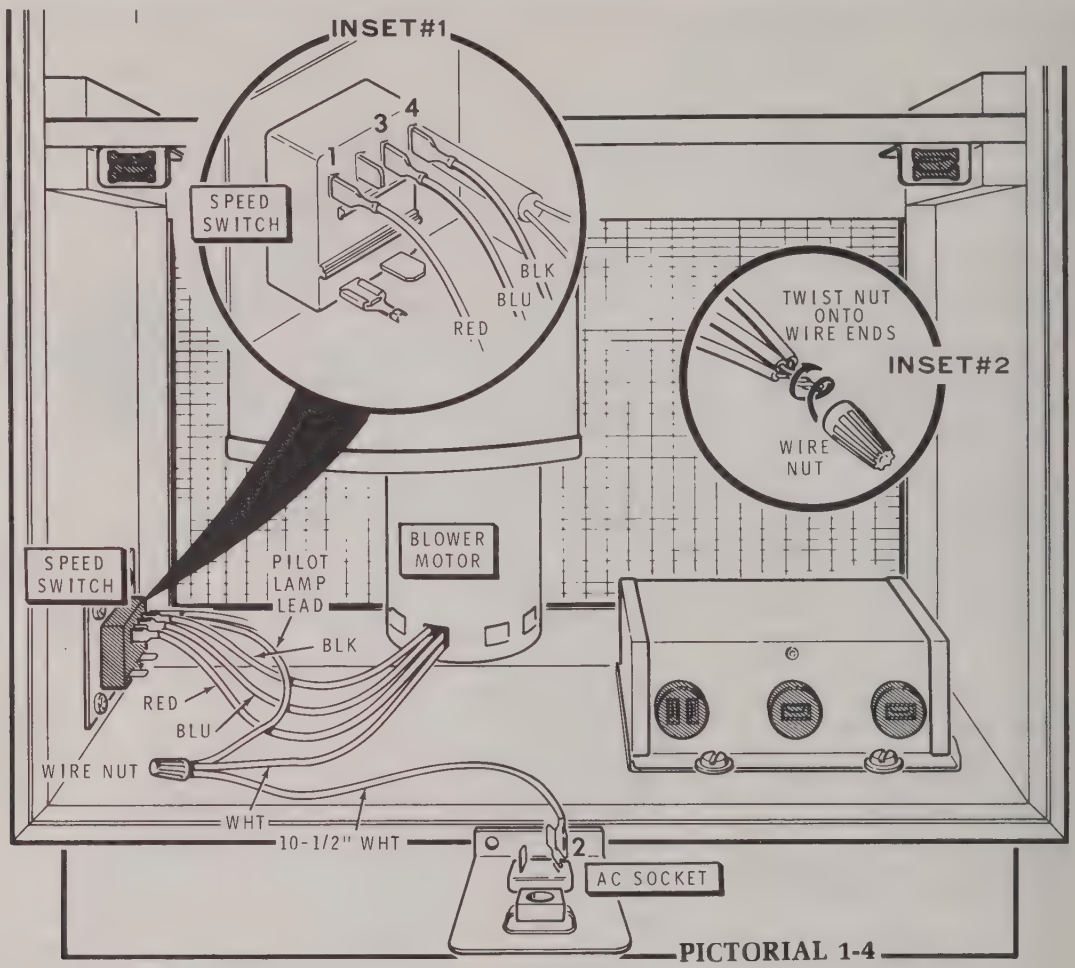
2. Push the connector adapter onto AC socket lug 2.



Detail 1-3A

( ) Position the line connector bracket assembly near the cabinet as shown in the Pictorial. Then push the connector on one end of the 14″ black wire onto Speed switch lug A. Push the connector on the other end of this wire onto AC socket lug 1.

( ) Push the connector on one end of the 5″ white wire onto the remaining power supply INPUT tab. Push the connector on the other end of this wire onto either tab at AC socket lug 2.



PICTORIAL 1-4

Refer to Pictorial 1-4 for the following steps.

( ) Refer to Detail 1-4A and mount the blower motor to the cabinet as follows:

1. Carefully peel the backing paper from the rubber gasket. Then press the gasket onto the indicated area of the blower motor. Be sure to center the gasket around the large hole in the motor.

2. Mount the blower motor to the cabinet with four rubber grommets, four 1/4" flat washers, and four 1/4-20 lockwasher-nuts. Tighten each nut until 1/16" of the bolt extends through the nut.

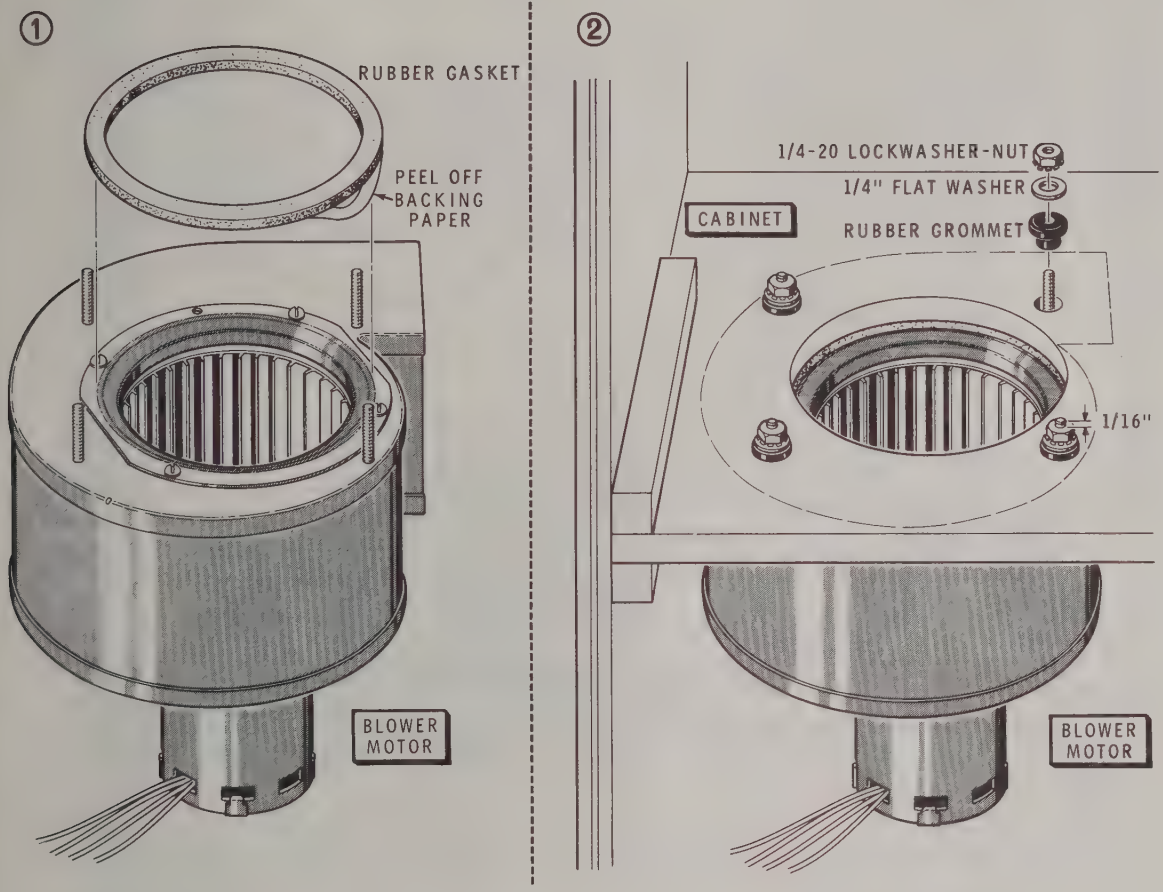
( ) Push the connector on the free end of the black wire coming from the blower motor onto Speed switch lug 4. (See inset drawing #1.)

( ) Push the connector on the free end of the blue wire coming from the blower motor onto the speed switch lug 3.

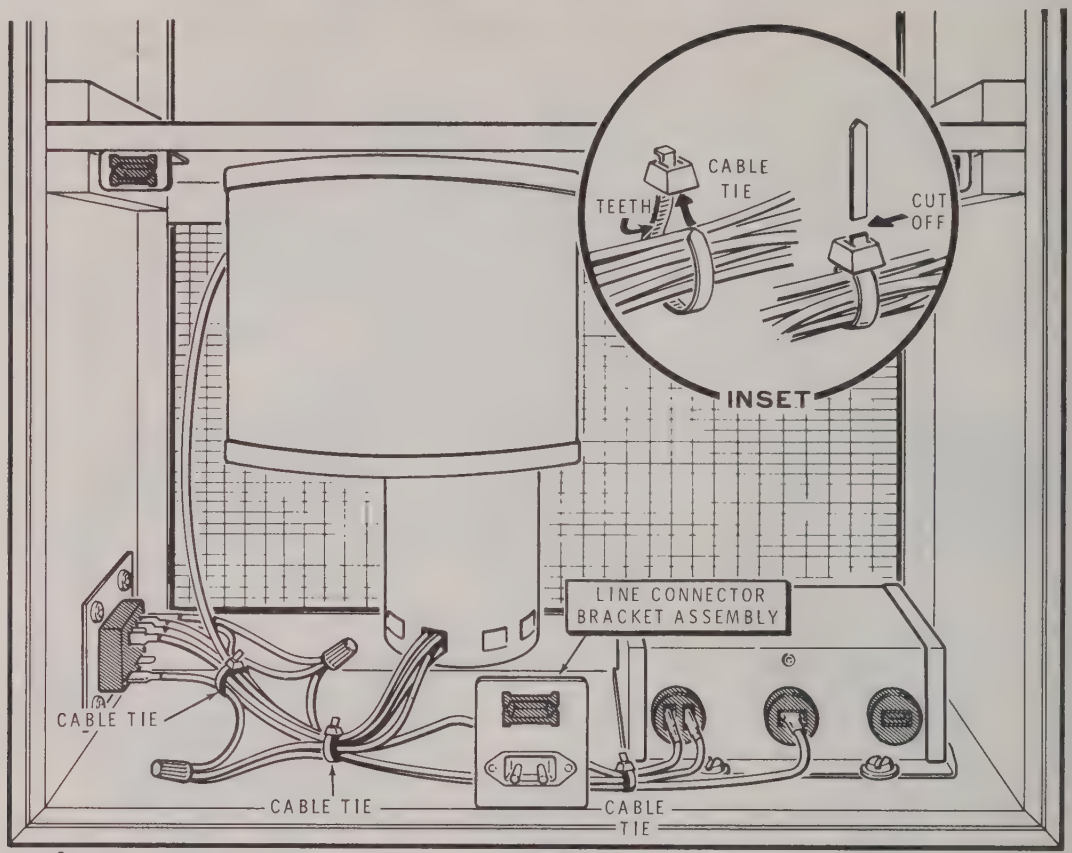
( ) Push the connector on the free end of the red wire coming from the blower motor onto speed switch lug 1.

( ) Refer to inset drawing #2 on the Pictorial and twist together the bared ends of the white wire coming from the motor, the remaining pilot lamp lead, and the 10-1/2" white wire. Then turn a wire nut onto the end of this wire connection.

( ) Push the connector on the free end of the 10-1/2" white wire onto the remaining tab at AC socket lug 2.


①
RUBBER GASKET
PEEL OFF BACKING PAPER
BLOWER MOTOR
②
1/4-20 LOCKWASHER-NUT
1/4" FLAT WASHER
CABINET
RUBBER GROMMET
1/16"
BLOWER MOTOR

Detail 1-4A



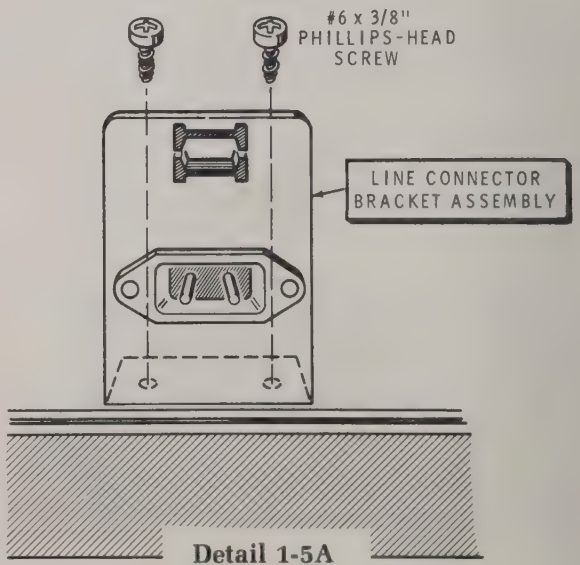
PICTORIAL 1-5

Refer to Pictorial 1-5 for the following steps.

( ) Refer to Detail 1-5A and mount the line connector bracket assembly to the cabinet. Use two #6 × 3/8" phillips-head screws. Center the bracket mounting holes over the cabinet mounting holes.

( ) Refer to the inset drawing on the Pictorial and install cable ties around the wires at the three locations shown. Cut off any excess cable tie.

This completes the wiring of your Console Air Cleaner. Check all of the wiring against the corresponding Pictorials to make sure it is connected properly before you continue.



Detail 1-5A

( ) Refer to Pictorial 1-6 and install the cell assembly in the top section of the cabinet as follows:

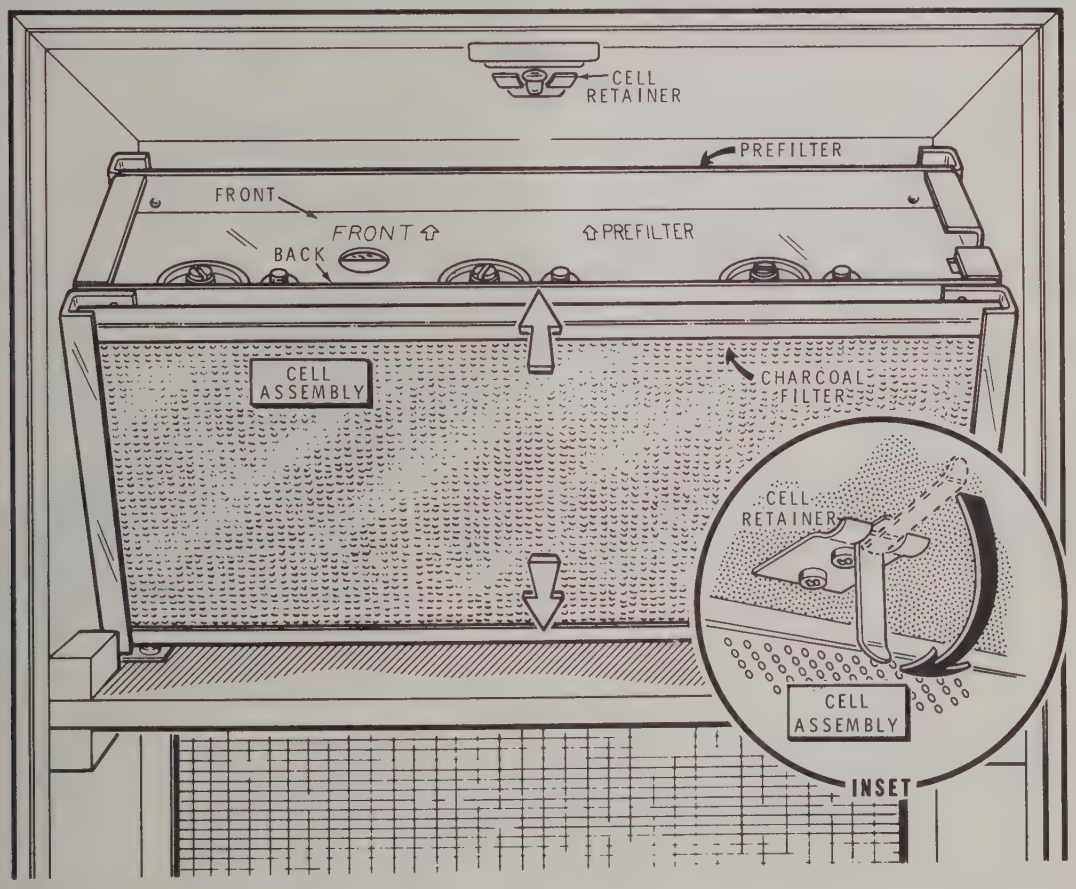
1. Be sure the prefilter and the charcoal filter are in place in the cell assembly. NOTE: Also be sure you removed the plastic bag from the charcoal filter as described in the "Unpacking and Assembly Instructions".

2. Be sure the cell retainer is opened up so it is flat against the inside cabinet top.

3. Start the cell assembly into the cabinet so the charcoal filter is **toward you** and the words "front" and "back" are up as shown.

4. Set the cell assembly all the way toward the front of the cabinet so it drops in place. NOTE: You may have to push down on the top of the cell assembly to make it seat properly. There should be approximately 1-1/8" between the top of the cell assembly and the inside top of the cabinet.

5. Pull the cell retainer down so it rests against the back of the cell assembly as shown in the inset drawing.



PICTORIAL 1-6

Refer to Pictoral 1-7 for the following steps.

NOTE: Examine both sides of the back panel for tape marks or defects. Use the best side of the panel when you perform the following steps.

( ) Position the back panel with the notch at the top as shown.

( ) Carefully peel the backing paper from the maintenance label. Then press the label on the outside of the back panel in the area shown.

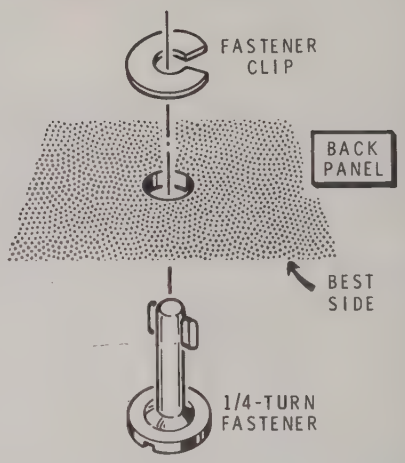
NOTE: The blue and white label shows the Model Number and the Production Series Number of your kit. Refer to these numbers in any communications you have with the Heath Company about your kit. This assures you that you will receive the most complete and up-to-date information in return.

( ) Carefully peel the backing paper from the blue and white label. Then press the label on the outside of the back panel in the area shown.

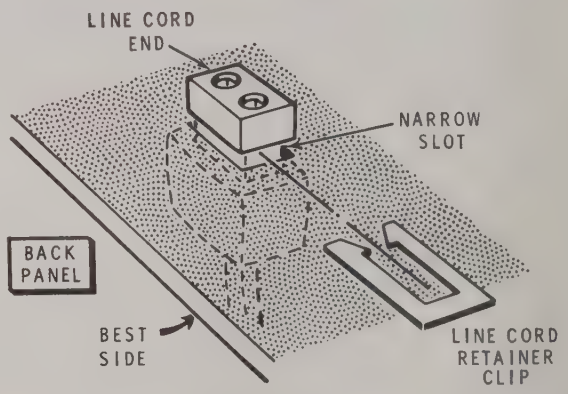
( ) Refer to Detail 1-7A and insert a 1/4-turn fastener through one of the three indicated holes in the back panel. Then install a fastener clip as shown.

( ) Similarly, install the remaining two 1/4-turn fasteners and fastener clips in the remaining two round holes in the back panel.

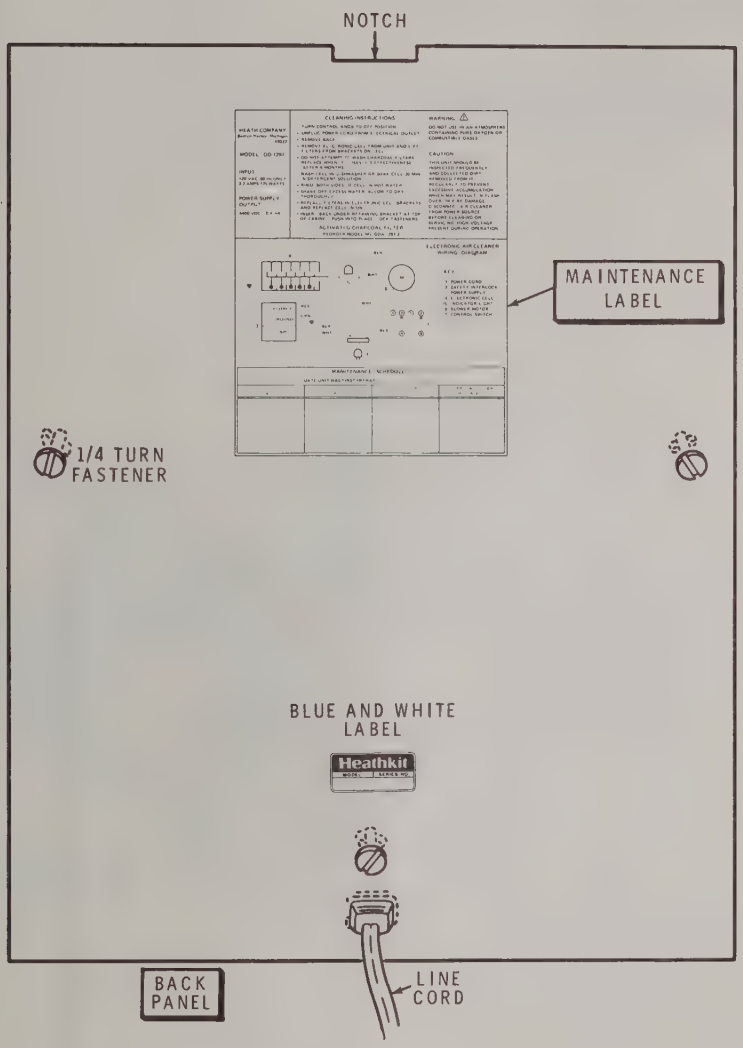
( ) Refer to Detail 1-7B and insert the indicated end of the line cord through the bottom opening in the back panel. Slide the line cord retainer clip over the narrow part of the line cord as shown.



Detail 1-7A



Detail 1-7B



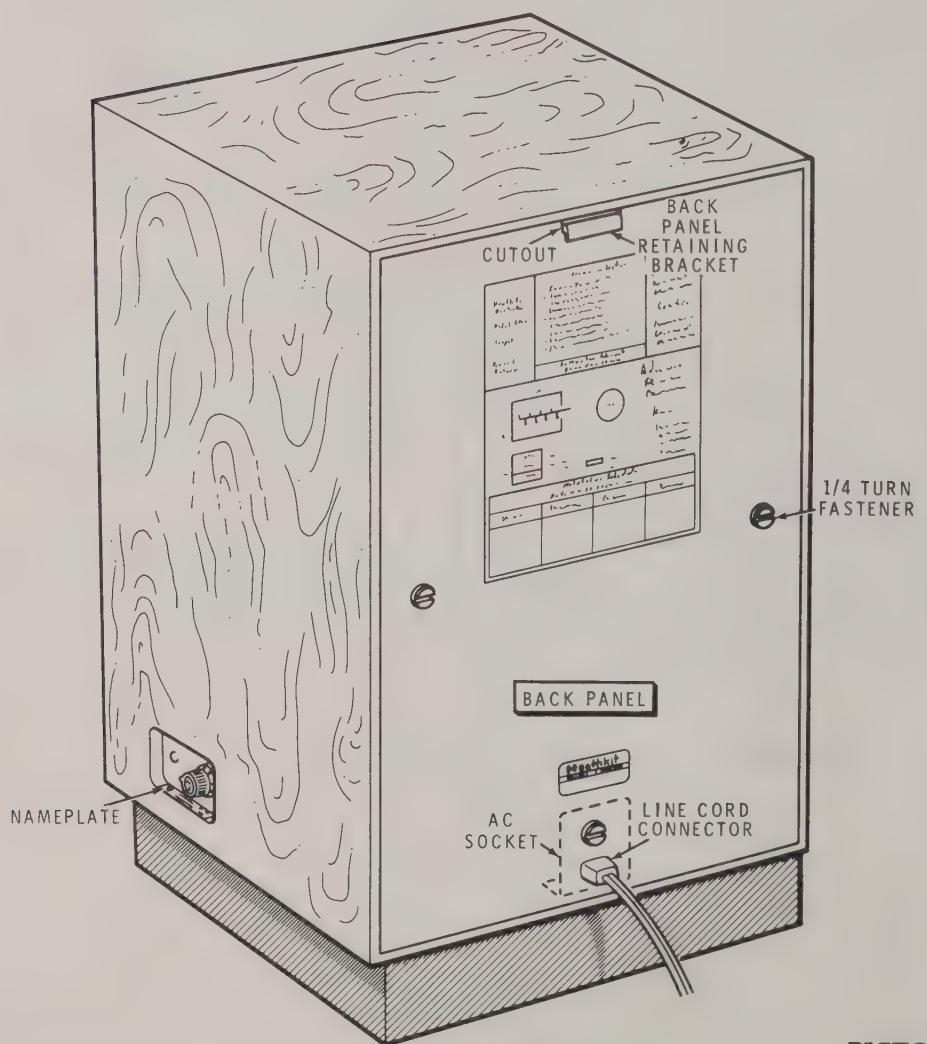
PICTORIAL 1-7

Refer to Pictorial 1-8 for the following steps.

( ) Install the back panel on the rear of the cabinet as follows:

1. Insert the cutout at the top of the back panel under the top mounting bracket.
2. Push the line cord connector into the AC socket.
3. Fasten the three 1/4-turn fasteners.

( ) Carefully peel the backing paper from the nameplate. Then press the nameplate onto the bottom of the opening in the side of the cabinet as shown.



PICTORIAL 1-8

CASTER INSTALLATION

Refer to Pictorial 1-9 for the following steps.

( ) Unplug the line cord from the AC wall outlet.

NOTE: While you perform the following steps, you will position the cabinet upside down on its top. Place a rug on a large padded cloth under the cabinet to prevent it from becoming scratched.

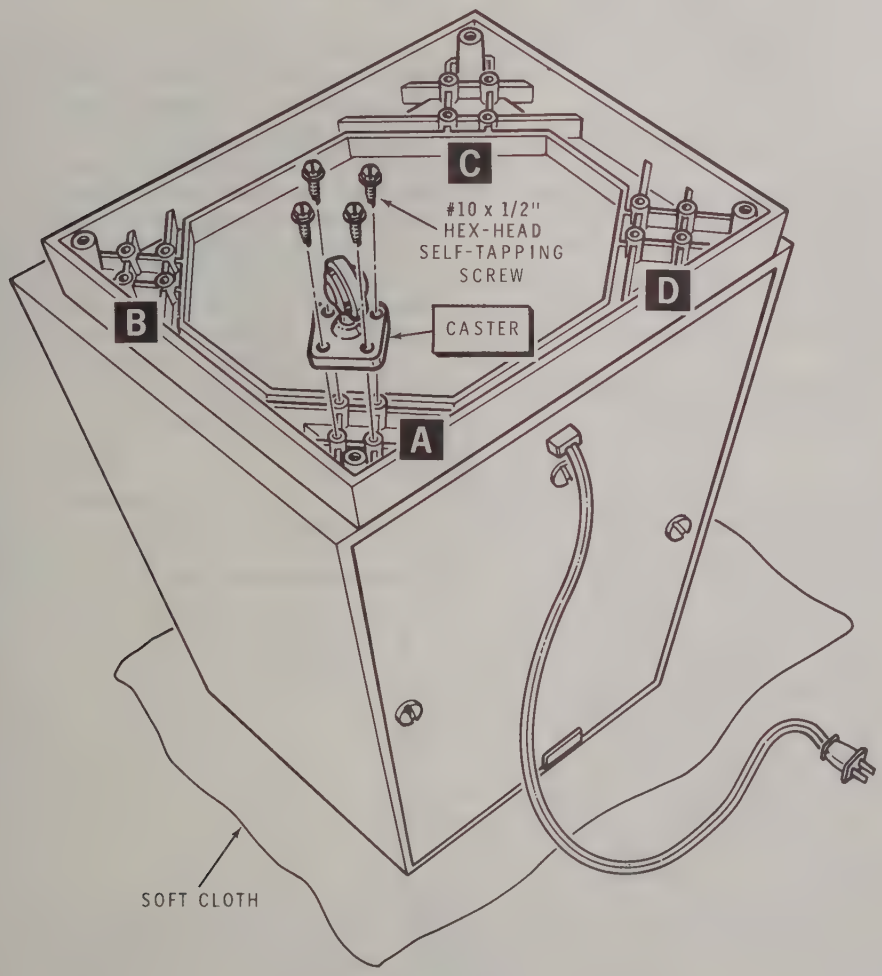
( ) Position the cabinet on its top.

( ) Mount a caster onto the bottom of the cabinet at A with four #10 × 1/2" hex-head self-tapping screws as shown.

( ) Similarly, mount casters onto the bottom of the cabinet at B, C, and D.

( ) Check each caster to make sure it rotates freely and does not bind. Then place the cabinet in its upright position.

This completes the "Caster Installation." Proceed to "Operation."



PICTORIAL 1-9

OPERATION

CAUTION: High amounts of ozone are generated during the 24-hour "burn-in" period. Therefore, we recommend that you operate your Air Cleaner in a well-ventillated area for a 24-hour period.

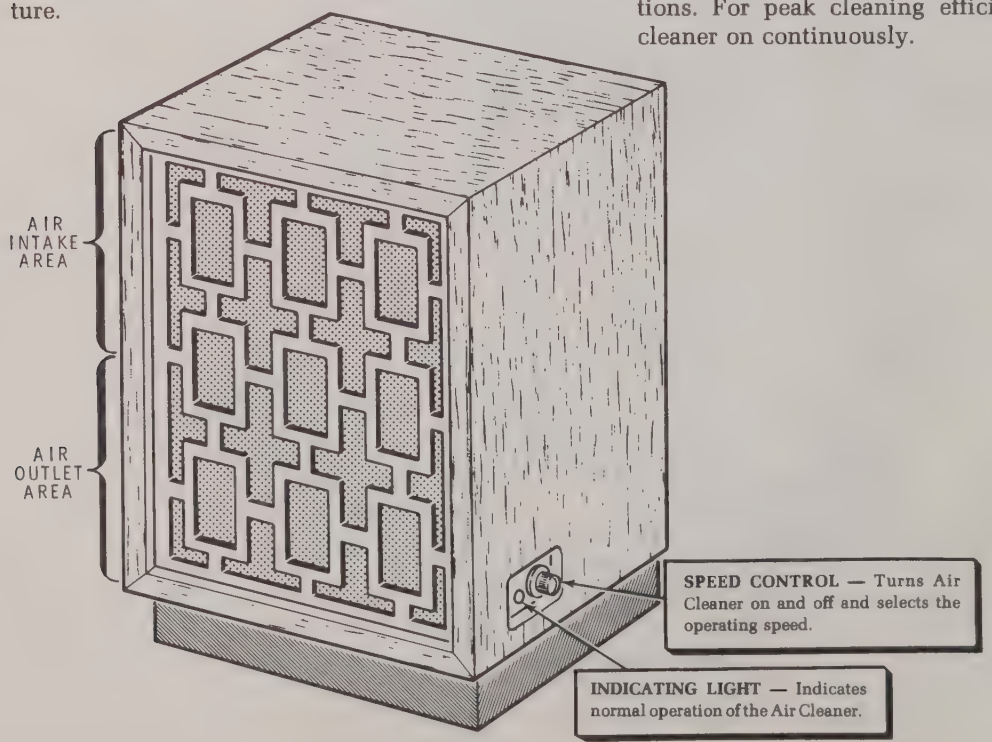
Refer to Pictorial 2-1 as you read the following paragraphs.

NOTE: When you first turn the Air Cleaner on, you may hear a snapping sound from inside the cabinet. This is normal and will occur occasionally during operation due to the ionizing of dust particles trapped in the cell. Continuous snapping (arcing) is not normal. If this condition occurs, turn the unit off and refer to "In Case of Difficulty."

Your GD-1297 Console Air Cleaner will operate almost anywhere in your living area as long as the air around it can circulate freely. We recommend that you place the unit where activity is the most frequent, such as the den, playroom, kitchen, or living room. For maximum efficiency in circulating clean air into the room and dirty air back into the unit, keep the front of the cabinet unobstructed by walls or furniture.

The Console Air Cleaner is designed to operate on ordinary house current. The line cord is attached to the back panel so that, whenever you remove the back panel, electrical power is disconnected from the unit. However, for safety purposes, always unplug the line cord from the AC wall receptacle before you clean or perform any maintenance on the unit.

Turn the Air Cleaner on by rotating the control knob counter-clockwise until the control clicks. The lamp will light to indicate normal operation of the ionizing cell, and the fan speed will be on high. You can decrease the speed by rotating the control knob further counterclockwise. Determine the optimum speed setting for your unit in relation to the area and contamination of air you wish to clean. Maximum fan speed will allow maximum cleaning capacity. After a short period of maximum cleaning, a midrange speed setting should suffice for most air cleaning conditions. For peak cleaning efficiency, leave the air cleaner on continuously.


AIR INTAKE AREA
AIR OUTLET AREA
SPEED CONTROL — Turns Air Cleaner on and off and selects the operating speed.
INDICATING LIGHT — Indicates normal operation of the Air Cleaner.

PICTORIAL 2-1

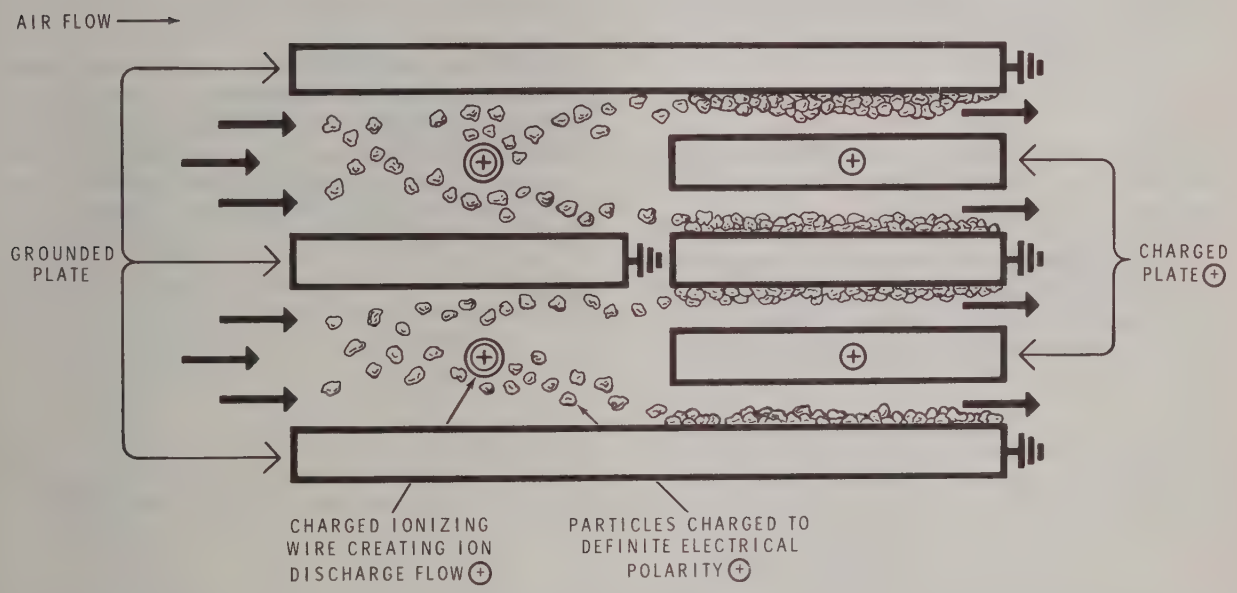
IONIZING CELL OPERATION

Refer to Pictorial 2-2 for the following operation.

During operation of your Console Air Cleaner, air is drawn into the cabinet through the top openings. Once inside, the pollution particles become "charged" with electricity as they pass through a section of positively charged ionizing wires. These positively charged particles then enter a collecting section with alternately charged positive and negative (grounded) collecting plates. The particles are repelled by the positive plates and attracted by the negative plates. The particles attach themselves to the negative collecting plates and remain there through natural adhesion until they are removed during cleaning (see Care and Cleaning).

At times, you will notice an occasional snapping sound coming from inside the cabinet. This is called "arcing" and results from large particles of dust being collected in the ionizing cell. (NOTE: As the ionizing cell becomes dirty, the arcing will become more frequent.) The now-cleaned air returns to the room through the bottom front grille.

It is normal for the pilot light to dim or flicker when an arc occurs. If the pilot light does not light or goes out during operation, remove the ionizing cell assembly for cleaning and inspection.


AIR FLOW
GROUNDED PLATE
CHARGED PLATE ⊕
CHARGED IONIZING WIRE CREATING ION DISCHARGE FLOW ⊕
PARTICLES CHARGED TO DEFINITE ELECTRICAL POLARITY ⊕

PICTORIAL 2-2

CARE AND CLEANING

Cabinet

Treat the cabinet of your Console Air Cleaner as you would any other fine piece of furniture. Soft cloths and mild nonabrasive cleaners will keep your cabinet clean and attractive for years.

Ionizing Cell

After several weeks of collecting dust, dirt, pollen, and other pollution, it will become necessary to clean the ionizing cell of your Air Cleaner. To clean the cell, perform the following steps:

1. Turn the Air Cleaner off and unplug it from the AC wall outlet.

2. Loosen the three 1/4-turn fasteners on the back panel with a coin or a screwdriver and remove the back panel from the cabinet.

3. Remove the ionizing cell from the cabinet.

NOTE: Use extreme care when you handle the ionizing cell so you do not damage the ionizing wires or bend any of the metal plates.

4. Perform this step only if you have a dishwasher. Otherwise, skip the step. Place the ionizing cell carefully on a dishwasher rack. Use an automatic dishwasher detergent and the hottest water setting. When the cell is completely washed, remove the cell from the dishwasher. Allow the cell to dry **completely** before you reinstall it in the cabinet. Refer to step 6.

5. Place the ionizing cell in a laundry tub or large basin. Use an automatic dishwasher detergent and the hottest water available and let the cell soak for 20 to 30 minutes. After the cell has soaked, agitate it vigorously for a minute or so until the plates are clean. Rinse the cell in clear hot water for an additional 5 to 10 minutes; then shake the majority of the water out of the cell and allow it to dry **completely** before you reinstall it in the cabinet.

6. Replace the ionizing cell back in the cabinet. Make sure you position the cell correctly as shown in Pictorial 1-6 .

CHARCOAL FILTER (GDA-1297-2)

The activated charcoal filter is used to absorb odors. As the filter loses it effectiveness, it should be replaced. **IT CANNOT BE CLEANED.** Under normal conditions, the filter should be replaced every six months. You can order the filter from the Heath Company under the model number shown above.

IN CASE OF DIFFICULTY

WARNING: DANGEROUS VOLTAGES ARE PRESENT INSIDE THE CABINET. DO NOT ATTEMPT TO DEFEAT THE AC INTERLOCK ON THE BACK PANEL.

Under no circumstances apply power to the Console Air Cleaner with the back panel either partially or completely removed. Never place any objects through the wire screens. Always disconnect the AC line cord from the wall outlet before you remove the back panel for cleaning or maintenance.

This part of the Manual will help you locate and troubleshoot difficulties which may occur in your Console Air Cleaner. The first "General" section consists of a visual check and inspection. The "Troubleshooting Chart" contains a series of "Symptoms" and "Possible Causes." Start your troubleshooting procedure by making the "Visual Checks" below. Then proceed to the appropriate "Symptom" and "Possible Causes."

GENERAL

Visual Checks

1. Recheck the wiring and make sure connections are tight.

2. Check for hardware and other foreign matter which may be lodged in the cell.

Troubleshooting Chart

The following chart lists the possible causes of specific malfunctions. If a particular part is mentioned as a possible cause, check the part and the wiring to it. It is also possible, on rare occasions, for a part to be faulty and require replacement.

In an extreme case where you are unable to resolve the difficulty, refer to the "Customer Service" information inside the rear cover of the Manual. Your Warranty is located inside the front cover.

SYMPTOM	POSSIBLE CAUSE
Unit inoperative.	1. Check wiring to power supply. 2. Check wiring to AC interlock connector. 3. Line cord improperly installed.
Fan works, pilot light out.	1. Cell is shorted. 2. Check for improper wiring, defective power supply, or defective light.
Pilot light on, fan inoperative.	1. Wiring to motor loose. 2. Defective motor.
Fan speed will not vary.	1. Defective speed control.
Continuous arcing inside ion cell.	1. Cell is dirty.

SPECIFICATIONS

Air Flow	Selectable (LO-MED-HI); 150, 200, 250 CFM*.
Efficiency	81% dust, 95% pollen @ 150 CFM.
Performance	99% ** of all airborne pollen. 94% ** of general airborne particles.
Ozone	Less than .05 PPM† (.03 PPM typical).
Filter Units (3)	Prefilter. Ionizing cell. Activated Charcoal Filter.
Power Supply	6400 VDC @ .4 mA.
Cabinet Finish	Southern Pecan Vinyl.
Cabinet Size	24-5/8″ high × 17-1/4″ wide × 13-1/2″ deep. (62.5 × 44.5 × 34.3 cm).
Net Weight	45 lbs. (20.4 kg).
Power Requirements	120 V, 60 Hz @ 175 watts.

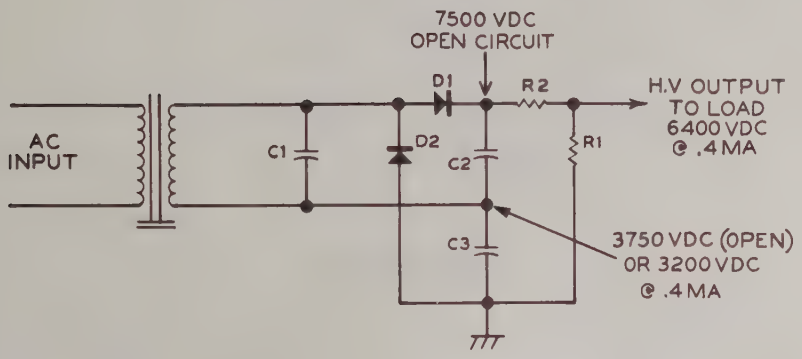
The Heath Company reserves the right to discontinue products and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.

*Cubic Feet Per Minute.

**National Bureau of Standards Dust Spot Method and American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 52-68.

†Parts Per Million.

CIRCUIT DESCRIPTION



PICTORIAL 3-1

Refer to Schematic Diagram (Pictorial 3-1) as you read the following Circuit Description.

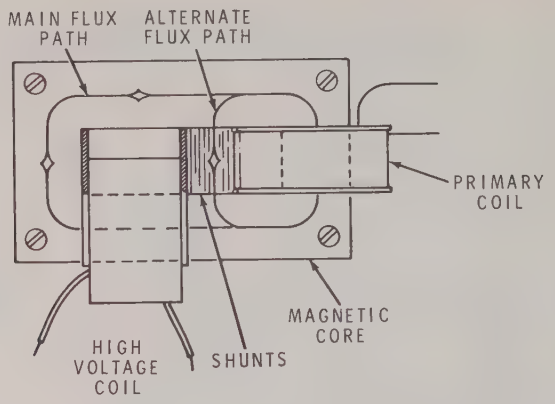
The power supply in the GD-1297 Console Air Cleaner is an energy-limited high voltage type which consists of a shunted core (ferroresonant) transformer, resonating capacitor, and a solid-state component section for rectification and filtering. These will be discussed in detail in the following paragraphs.

RECTIFICATION AND FILTERING

The rectifier and filter section is made up of diodes D1 and D2, and capacitors C2 and C3. This is a conventional voltage doubler. Resistor R1 is used to bleed the charge on capacitors C2, C3, and the load to zero when the AC power to the unit is turned off. Resistor R2 acts as a surge suppressor which limits the amplitude of the current when the load shorts (from dirt) or arcs.

Capacitor C1 is in parallel with the high voltage coil and forms a tuned circuit that is resonant at, or near, the 60 Hz operating power frequency. This facilitates maximum transfer of energy from the primary to the secondary winding. During each half cycle of the input power frequency, energy is alternately stored in resonant capacitor C1 and then given back to the electromagnetic field of the high voltage coil. This causes the secondary flux path of the transformer core to operate in a condition of saturation. Since the core is saturated, the unit becomes a magnetic voltage regulator. Large changes in input voltage produce only small changes in output voltage.

The transformer also regulates with load changes. As load current is increased beyond its linear operating region, a point is reached beyond which the current cannot be increased. Continued reduction in load impedance will cause the load current to decrease. A shorted load draws very little current. This characteristic is referred to as ferroresonant foldback. During a shorted condition, very little power is transferred from the primary to the secondary circuit, and the input current to the transformer actually decreases. This makes the system inherently "burnout" proof, and so, does not require short circuit protection.



PICTORIAL 3-2

SHUNTED CORE TRANSFORMER

A shunted core transformer (Pictorial 3-2) is used to provide electrical isolation and energy limiting. The low voltage input coil is located on one leg of the core, and the high voltage coil is located on another leg. Shunts physically isolate the two coils. This provides two energy paths for the flux generated by the primary coil: one through the core leg that the high voltage coil is mounted on, and the other through the shunts. During normal operation, nearly all the flux generated by the primary goes through the leg coupling the high voltage output coil, and energy is delivered to the load. Very little flux flows through the core shunts because this path presents a high reluctance compared to the high voltage leg.

When the load arcs, or shorts, a short is reflected to the high voltage coil terminals which increases the reluctance of the high voltage leg of the transformer core. The shunt path now has less reluctance than the high voltage leg, and nearly all the flux generated by the primary coil is shunted around the high voltage coil. Very little is transferred to the load. When the short is removed from the load, the system automatically recovers. This provides short circuit protection and energy limiting magnetically.

CUSTOMER SERVICE

REPLACEMENT PARTS

Please provide complete information when you request replacements from either the factory or Heath/Zenith Computers and Electronics centers. Be certain to include the **HEATH** part number exactly as it appears in the parts list.

ORDERING FROM THE FACTORY

Print all of the information requested on the parts order form furnished with this product and mail it to Heath. For telephone orders (parts only) dial 616 982-3571. If you are unable to locate an order form, write us a letter or card including:

- Heath part number.
- Model number.
- Date of purchase.
- Location purchased or invoice number.
- Nature of the defect.
- Your payment or authorization for COD shipment of parts not covered by warranty.

Mail letters to: Heath Company
Benton Harbor
MI 49022
Attn: Parts Replacement

Retain original parts until you receive replacements. Parts that should be returned to the factory will be listed on your packing slip.

OBTAINING REPLACEMENTS FROM HEATH/ZENITH COMPUTER AND ELECTRONICS CENTERS

For your convenience, "over the counter" replacement parts are available from the Heath/Zenith Computer and Electronics centers listed in your catalog. Be sure to bring in the original part and purchase invoice when you request a warranty replacement from a Heath/Zenith Computer and Electronics center.

TECHNICAL CONSULTATION

Need help with your kit? — Self-Service? — Construction? – Operation? — Call or write for assistance. You'll find our Technical Consultants eager to help with just about any technical problem except "customizing" for unique applications.

The effectiveness of our consultation service depends on the information you furnish. Be sure to tell us:

- The Model number and Series number from the blue and white label.
- The date of purchase.
- An exact description of the difficulty.
- Everything you have done in attempting to correct the problem.

Also include switch positions, connections to other units, operating procedures, voltage readings, and any other information you think might be helpful.

Please do not send parts for testing, unless this is specifically requested by our Consultants.

Hints: Telephone traffic is lightest at midweek — please be sure your Manual and notes are on hand when you call.

Heath/Zenith Computer and Electronics center facilities are also available for telephone or "walk-in" personal assistance.

REPAIR SERVICE

Service facilities are available, if they are needed, to repair your completed kit. (Kits that have been modified, soldered with paste flux or acid core solder, cannot be accepted for repair.)

If it is convenient, personally deliver your kit to a Heath/Zenith Computers and Electronics center. For warranty parts replacement, supply a copy of the invoice or sales slip.

If you prefer to ship your kit to the factory, attach a letter containing the following information directly to the unit:

- Your name and address.
- Date of purchase and invoice number.
- Copies of all correspondence relevant to the service of the kit.
- A brief description of the difficulty.
- Authorization to return your kit COD for the service and shipping charges. (This will reduce the possibility of delay.)

Check the equipment to see that all screws and parts are secured. (Do not include any wooden cabinets or color television picture tubes, as these are easily damaged in shipment. Do not include the kit Manual.) Place the equipment in a strong carton with at least THREE INCHES of *resilient* packing material (shredded paper, excelsior, etc.) on all sides. Use additional packing material where there are protrusions (control sticks, large knobs, etc.). If the unit weighs over 15 lbs., place this carton in another one with 3/4" of packing material between the two.

Seal the carton with reinforced gummed tape, tie it with a strong cord, and mark it "Fragile" on at least two sides. Remember, the carrier will not accept liability for shipping damage if the unit is insufficiently packed. Ship by prepaid express, United Parcel Service, or insured Parcel Post to:

Heath Company
Service Department
Benton Harbor, Michigan 49022

HEATH ZENITH

MP MASTER
MA22786

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THE WORLD'S FINEST ELECTRONIC EQUIPMENT IN KIT FORM

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